RxTools v21.0.0 Release Notes

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This document is the Release Notes of Septentrio RxTools which includes RxControl, Data Link, SBF Converter, SBF Analyzer, RxLogger, RxUpgrade, RxDownload, RxPlanner, RxAssistant, RxLauncher, SBF Tools, APS3G Tools, the Receiver Communication SDK for C++/Qt and the USB drivers.

Release References

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USB Driver version:	3.0.2
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Qt (LGPL) Version:	5.12.10-msvc2017

Deliverables

1. RxTools_RelNote.pdf, the Release Notes (this document)
2. RxTools_Manual.pdf, the RxTools 21.0.0 Manual (an Adobe PDF document)
3. win32/RxTools_21_0_0_Installer.exe, the RxTools installer for Windows
4. linux-i386/RxTools_21_0_0_Installer.bin, the RxTools installer for 32-bit Linux
5. linux-x86_64/RxTools_21_0_0_Installer_x64.bin, the RxTools installer for 64-bit Linux

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A note about compatibility

`RxControl`, `RxLogger`, `RxUpgrade`[1], `RxAssistant` and `RxDownload` support Altus, AsteRx and PolaRx product lines, with the exception of PolaRx2/2e.

`APS3G Tools` supports the Altus APS3G product family.

`SBF Converter` and `SBF Analyzer` are capable of processing SBF log files made by any Septentrio receiver.

`Data Link`, `RxPlanner` and `RxLauncher` are not dependent on any specific receiver.

The SBF Tools support SBF files from all above product lines, with the following exceptions: PolaRx2/2e SBF files are not supported by sbf2cmd and sbf2ismr.

Recommended System Requirements

The following operating systems are supported:

- Windows 7®
- Windows 8®
- Windows 10®
- Fedora 23 or later for the applications (and installer) using Qt technology. The standalone tools (except bin2asc) run on older distributions.

The minimal system requirements(for 1 Hz update rate [2]) are:

- 1 GHz processor
- 1 GB RAM

[1] RxUpgrade does not support Altus APS3G. Please upgrade your Altus APS3G receiver using the SD card.
[2] Higher data rates (e.g. 10 Hz) will require higher CPU and memory requirements.

- 1024×768 or higher resolution

Installation

Before installing RxTools, please consult the section "RxTools installer known issues and limitations" below in this document.

To install RxTools on your PC, please execute `RxTools_21_0_0_Installer.exe` on Windows or `RxTools_21_0_0_Installer.bin` or `RxTools_21_0_0_Installer_x64.bin` on Linux. These installers are provided with the product delivery, or can alternatively be downloaded from www.septentrio.com: please navigate to the Support page. The installers can be found under the Software/RxTools section. Upon their startup, the RxTools applications check for the presence of a newer RxTools release. If present, the user can choose to download and install it.

The `RxTools 21.0.0` package provides `RxControl`, `SBF Analyzer`, `RxLogger`, `RxUpgrade`, `Data Link`, `SBF Converter`, `RxDownload`, `RxPlanner`, `RxAssistant`, `RxLauncher` and `APS3G Tools`, as well as the SBF Tools. By default, the installer installs all components, including these applications and the Windows USB drivers. Users may choose a Custom installation and decide which applications to install. Follow the instructions in the installer for running a Custom setup.

RxTools 21.0.0

RxTools installer v21.0.0

RxTools installer differences to previous versions

RxTools installer differences introduced in RxTools v21.0.0

Issues resolved in RxTools installer:

1. Updated the installer framework.

RxTools installer differences introduced in RxTools v20.0.0

New features in RxTools installer:

1. The sbf2sbf conversion tool has been added to RxTools. The sbf2sbf executable is available in the installation directory.

RxTools installer differences introduced in RxTools v19.0.1

No differences

RxTools installer differences introduced in RxTools v19.0.0

Issues resolved in RxTools installer:

1. The Linux 64-bit installer now includes a plugin that was missing.

RxTools installer known issues and limitations

1. During the installation of RxTools on Linux some warnings may appear on the console output. This is normal and can typically be ignored.
2. When downgrading RxTools from an installed version 16.0.0 or higher to a version before 16.0.0, the existing installation must first be uninstalled by explicitly executing the uninstaller.
3. The Windows RxTools drivers and installer are signed with a SHA256 certificate. When the "Microsoft Security Advisory 3033929: Availability of SHA-2 Code Signing Support for Windows 7 and Windows Server 2008 R2" (https://technet.microsoft.com/en-us/library/security/3033929) is not installed on your system it might be that the drivers are not working. Installing the Microsoft update fixes the problem.
4. The RxTools installer on Linux requests root permissions via sudo. If sudo never has been used, an error dialog might be shown during the installation but the installation will continue and succeed.
5. When installing RxTools on a Linux machine, it is possible that the uninstallation step fails. The user then receives a message that the installation directory is not empty and is asked to select another directory. If this happens, please make sure to uninstall RxTools (by running the uninstaller executable in the installation directory, and restart the installer.

RxTools general v21.0.0

RxTools general differences to previous versions

RxTools general differences introduced in RxTools v21.0.0

No differences

RxTools general differences introduced in RxTools v20.0.0

New features in RxTools general:

1. Support is added for extra BeiDou PRNs above C37.
2. On Linux, RxTools applications are by default launched in the background: when invoking the runXYZ scripts (e.g. runRxUpgrade), the terminal is not blocked. The --wait option has been added in RxTools for Linux to change this behavior. This can be useful in scripts to block script continuation until the application finishes.
3. Support is added for the BeiDou B2b signal.

Issues resolved in RxTools general:

1. IRNSS has been renamed to NavIC.

RxTools general differences introduced in RxTools v19.0.1

No differences

RxTools general differences introduced in RxTools v19.0.0

Issues resolved in RxTools general:

1. Support for playing/analyzing PolaRx2 files has been removed from the graphical RxTools.

RxTools general known issues and limitations

1. When using large display fonts, some parts of the user interface may not be displayed appropriately, discarding information or showing scroll bars or overlapping text. If this poses a problem, consider configuring your display using a text scaling of 100% (or 96 DPI).
2. When data is sent over the serial port at a high rate to an RxTools graphical application, CRC errors may occur. This is a limitation of the serial port of the PC equipment being used rather than of the RxTools graphical application itself.
3. Due to high amounts of data provided by the SBF messages, when logging at high data rates of above 5 Hz it is strongly advised to log the minimum amount of blocks needed. Logging of all possible data blocks may result in data gaps. When logging at data rates above 1 Hz please use the USB connection.
4. When opening the "Help Topics" from an RxTools application, some web browsers fail to navigate to the relevant help page. The page can be reached by clicking the corresponding link in the table of contents. In some browsers the index tab is also not working properly.
5. RxTools requires GLIBCXX version 3.4.15 or higher on Linux platforms.
6. The RxTools applications need a secure link for some operations (e.g. to check if a newer version is available). Unfortunately new Linux distributions are shipped with a new OpenSSL library which is not backwards compatible with the one used to compile RxTools. In order to solve this problem, please install the OpenSSL compatibility libraries (e.g. on Fedora this is the package compat-openssl10).

RxControl v21.0.0

RxControl is a graphical user interface application which facilitates control and monitoring of Septentrio receivers in real time. Among different features it allows configuration of Septentrio receivers in a user friendly way, offers multiple views for monitoring data and offers a simple logger allowing you to record SBF files of the raw data you are receiving. To connect your receiver to RxControl, follow the instructions provided in the manual.

RxControl differences to previous versions

RxControl differences introduced in RxTools v21.0.0

New features in RxControl:

1. The DiffCorr LED in the status bar has been replaced by an icon that indicates whether differential corrections are being received and/or sent.
2. The IMU Widget can now also show the data from a Velocity sensor if such a sensor is available.

Issues resolved in RxControl:

1. An issue has been fixed that caused the re-connection to the receiver after upgrading over USB to fail.

RxControl differences introduced in RxTools v20.0.0

New features in RxControl:

1. The entry of time schedules for log sessions has been improved. (This feature is only available on certain receivers.)

RxControl differences introduced in RxTools v19.0.1

Issues resolved in RxControl:

1. An issue has been fixed in the receiver settings windows, such that the command-specific help links work correctly again.

RxControl differences introduced in RxTools v19.0.0

New features in RxControl:

1. The connection dialog has been improved. For existing connection items, information is shown about the receiver that is related to the item. Items also reflect whether the receiver (or file) is still available or not. (The polling of receivers can be disabled in the preferences.) It is now also possible to connect using the same TCP/IP connection in multiple instances of RxControl (or RxDownload/RxLogger) at the same time.
2. The Message Inspector offers a search box to filter messages and submessages. It is now for example possible to show measurement info for a given satellite.
3. The Signals time plot readability has improved by rendering thicker lines if only a few satellites are shown in the plot.

Issues resolved in RxControl:

1. The External Sensor Measurements timeplot now shows the measurements at full rate, where in the past this time plot showed subsampled data.
2. An issue has been resolved in the preferences, where the reference position height was not correctly updated when dragging the reference position in the map.

RxControl known issues and limitations

1. SBF communication from the receiver to RxControl depends on the configured update rate and on the data needed for the current open views. If many views are open at a high data rate (e.g. 10 Hz), this may lead to a high CPU load of the receiver. Also, make sure that the connection to the receiver provides the necessary bandwidth: e.g. using a serial connection at typical baud rates will not support 10 Hz updates.
2. In certain configurations, RxControl may have difficulties to connect to a receiver after it has been reset. This can happen if the receiver's boot config has the "ASCII Display" output turned on for the port used by RxControl to communicate with the receiver.
3. In the planimetric plot, the distance between gridlines that are rendered when the Geodetic Grid is enabled does not correspond to the length of the scale bar. Please use the scale bar to interpret distances in the plot.

4. If a height plot already contains data, and then PVT is lost, during the time that there is no PVT, the height time plot is blank. If PVT is available again, the height data appears again (including the data from before the PVT loss).
5. When opening the height time plot or the ENU time plot, the historic data for the Integration Mode and GNSS Attitude Mode may not be filled in correctly. The new data that is appended after the plot is opened is correct.
6. The default number of digits used for the representation of certain fields in bin2asc or the message inspector may be insufficient. When more precision is needed, bin2asc allows to specify the required precision.
7. In specific configurations, such as on Linux with a serial to Ethernet converter, it may take a long time to detect which serial ports are available. When launching the application or when opening a new connection, this may cause the application to temporarily stop responding for some time (up to tens of seconds).
8. Filtering PVT modes through the Time Plot Options dialog does not work as expected.
9. When converting between Cartesian, geodetic coordinates and ENU coordinates, it is assumed that the reported coordinates are in a datum that uses the WGS84/GRS80 ellipsoid. This assumption does not always hold when the receiver is configured to use another geodetic datum. In this case, the reported coordinates can be wrong.
10. If the planimetric plot contains positions in multiple datums, no datum transformation is applied. Each position is plotted at the coordinates that correspond to its own datum.
11. The conversion between Cartesian and geodetic standard deviation values is wrong. When plotting the Position Standard Deviation Cartesian Time Plot or the Position Standard Deviation Geodetic Time Plot, make sure the SBF file has the corresponding PosCovCartesian or PosCovGeodetic block or in RxControl the corresponding Coordinate System is configured in the preferences.
12. As of RxTools 16.4.0, RxControl reports the value measured by the temperature sensor in the Status tab. For selected receivers without temperature sensor (PolaRx4 Product Group and AsteRx2eH), this will show a value of 0 degrees Celsius.

Data Link v21.0.0

Data Link is a graphical communication terminal with multiple ports which allows users to establish and forward connections between a receiver and other devices connected in serial, UDP/TCP/IP ports and/or NTRIP. Data Link is handy to use when transmitting Differential corrections (RTCM, CMR, etc.) to different ports, when setting up a Dial-up modem connection, when making an NTRIP client connection or when using command line scripts to set up communication devices.

Data Link differences to previous versions

Data Link differences introduced in RxTools v21.0.0

No differences

Data Link differences introduced in RxTools v20.0.0

Issues resolved in Data Link:

1. An issue is fixed which caused copying received data from the connection data window to the clipboard to fail in certain cases.

Data Link differences introduced in RxTools v19.0.1

No differences

Data Link differences introduced in RxTools v19.0.0

No differences

Data Link known issues and limitations

1. Data Link may on rare occasions hang, taking 100% of the capacity of the PC's CPU. In this situation go to the Task Manager and end the Data Link process manually. Then restart Data Link.
2. During a congested connection Data Link may crash. The time it takes before the crash occurs depends on your PC's memory availability and the amount of congestion. To remedy the problem, restart Data Link and reduce the connection load.
3. When using the "Log File" feature, note that the log file is kept open as long as the option is enabled or the program is running (regardless of the connection state).
4. After a network outage, a TCP/IP client (or host) connection in Data Link might show it is still connected, while the host (or client) has already closed the connection. When this happens, disconnect and reconnect the client (or host) connection.

SBF Converter v21.0.0

SBF Converter is an application that allows to convert SBF log files to various formats, including ASCII, RINEX, KML (Google Earth). It is an intuitive GUI shell around the underlying command-line conversion tools. SBF Converter also allows conversion of multiple files at once.

SBF Converter differences to previous versions

SBF Converter differences introduced in RxTools v21.0.0

No differences

SBF Converter differences introduced in RxTools v20.0.0

No differences

SBF Converter differences introduced in RxTools v19.0.1

No differences

SBF Converter differences introduced in RxTools v19.0.0

New features in SBF Converter:

1. It is now possible to close SBF Converter without first having to close the conversion result window.
2. Session support has been added to make it possible to switch fast between several configurations.

SBF Converter known issues and limitations

1. When a conversion is cancelled, temporary files may not be deleted.
2. For the RINEX conversion, when the "Add sequence number in IGS output file name" check box is checked and multiple files are being converted, neither SBF Converter nor sbf2rin will be comparing the time inside the input files and figuring out the right file sequence. Therefore, please make sure that the input files in the Multiple File Selection dialog appear in the correct sequential order from top to bottom.
3. Conversion to KML assumes the SBF file contains positions in WGS84. If the SBF file contains positions in another datum, the KML file will show position errors introduced by the datum difference.
4. Conversion to GPX assumes the SBF file contains positions in WGS84. If the SBF file contains positions in another datum, the GPX file will show position errors introduced by the datum difference.

SBF Analyzer v21.0.0

SBF Analyzer is a GUI application designed to analyze data from SBF log files. Similar to RxControl, SBF Analyzer allows visualization of multiple time plots as well as visualization of historic information in the SBF log file. It is a powerful tool when deep analysis of data recorded by Septentrio receivers is needed. As its output, SBF Analyzer can either open application windows allowing to interact with the plots much in the same way as in RxControl, but also offers the possibility to generate PDF documents following fully customizable templates.

SBF Analyzer differences to previous versions

SBF Analyzer differences introduced in RxTools v21.0.0

New features in SBF Analyzer:

1. The Velocity input is now supported in the External Sensor Measurements Plot.

SBF Analyzer differences introduced in RxTools v20.0.0

New features in SBF Analyzer:

1. SBF Analyzer data comparison now supports the lastest Spirent GSS9000 truth data format.

Issues resolved in SBF Analyzer:

1. An issue is fixed in the Signals Used In File table in the General File Information view, where in certain cases some signals were wrongly reported as being used in PVT.

SBF Analyzer differences introduced in RxTools v19.0.1

No differences

SBF Analyzer differences introduced in RxTools v19.0.0

New features in SBF Analyzer:

1. SBF Analyzer can now compare the analyzed SBF file with secondary data from another SBF file or from Spirent scenario truth data. The following comparisons can be plotted: Position Error, Velocity Error, Satellite Position Error, Satellite Velocity Error, Pseudorange Error, Doppler Error, Iono Delay Difference, Tropo Delay Difference, C/N0 Difference.
2. SBF Analyzer time interval filtering now allows to specify a number of minutes to be processed at the beginning or at the end of the file.
3. Session support has been added to make it possible to switch fast between several configurations.
4. The Signals time plot readability has improved by rendering thicker lines if only a few satellites are shown in the plot.

Issues resolved in SBF Analyzer:

1. The External Sensor Measurements timeplot now shows the measurements at full rate, where in the past this time plot showed subsampled data.
2. An issue has been resolved in the preferences, where the reference position height was not correctly updated when dragging the reference position in the map.

SBF Analyzer known issues and limitations

1. A PDF file created by the reporter may show on screen some small inconsistencies in the colors that are used to represent data. On print the colors are consistent.
2. In certain circumstances, time plot legends may have too many entries to fit in the allocated area. The entries may be displayed overlapping and become unreadable.
3. When post-processing a file with SBF Analyzer the local time that is shown is not the local time of were the file is recorded, but the local time with the settings as specified in your PC's locale.
4. In the planimetric plot, the distance between gridlines that are rendered when the Geodetic Grid is enabled does not correspond to the length of the scale bar. Please use the scale bar to interpret distances in the plot.
5. If a planimetric plot is open at the time a new analysis is started, that planimetric plot will be closed.
6. Filtering PVT modes through the Time Plot Options dialog does not work as expected.
7. The Message Statistics tab in the General File Information window reports gaps in the occurrences of regular rate SBF messages. However, it does not detect missing messages at the very beginning of the file, i.e. gaps between the first and the second occurrence of a given SBF message type.
8. When converting between Cartesian, geodetic coordinates and ENU coordinates, it is assumed that the reported coordinates are in a datum that uses the WGS84/GRS80 ellipsoid. This assumption does not always hold when the receiver is configured to use another geodetic datum. In this case, the reported coordinates can be wrong.
9. If the planimetric plot contains positions in multiple datums, no datum transformation is applied. Each position is plotted at the coordinates that correspond to its own datum.

10. The conversion between Cartesian and geodetic standard deviation values is wrong. When plotting the Position Standard Deviation Cartesian Time Plot or the Position Standard Deviation Geodetic Time Plot, make sure the SBF file has the corresponding PosCovCartesian or PosCovGeodetic block or in RxControl the corresponding Coordinate System is configured in the preferences.

RxLogger v21.0.0

RxLogger is a GUI application which provides advanced logging capability. Its main feature is support of logging on multiple streams, where an SBF frequency rate can be specified per stream. RxLogger also offers post-processing actions of SBF files such as conversion to RINEX format, conversion to CGGTTS format, FTP transfers, compression as well as custom actions ideal for reference receivers.

RxLogger differences to previous versions

RxLogger differences introduced in RxTools v21.0.0

No differences

RxLogger differences introduced in RxTools v20.0.0

No differences

RxLogger differences introduced in RxTools v19.0.1

No differences

RxLogger differences introduced in RxTools v19.0.0

New features in RxLogger:

1. The connection dialog has been improved. For existing connection items, information is shown about the receiver that is related to the item. Items also reflect whether the receiver (or file) is still available or not. (The polling of receivers can be disabled in the preferences.) It is now also possible to connect using the same TCP/IP connection in multiple instances of RxControl (or RxDownload/RxLogger) at the same time.

RxLogger known issues and limitations

1. In specific configurations, such as on Linux with a serial to Ethernet converter, it may take a long time to detect which serial ports are available. When launching the application or when opening a new connection, this may cause the application to temporarily stop responding for some time (up to tens of seconds).

RxUpgrade v21.0.0

RxUpgrade is a small application which offers a handy and user friendly GUI wizard for updating Septentrio receivers. RxUpgrade can also be launched via command line allowing you to easily upgrade multiple receivers at a time.

RxUpgrade differences to previous versions

RxUpgrade differences introduced in RxTools v21.0.0

Issues resolved in RxUpgrade:

1. An issue has been fixed that caused the re-connection to the receiver after upgrading over USB to fail.

RxUpgrade differences introduced in RxTools v20.0.0

No differences

RxUpgrade differences introduced in RxTools v19.0.1

No differences

RxUpgrade differences introduced in RxTools v19.0.0

No differences

RxUpgrade known issues and limitations

1. Rarely it happens that RxUpgrade becomes unresponsive. This does not necessarily mean that the upgrade has failed. RxControl can be used to check the firmware version of the receiver: Help -> Receiver Identification.
2. When starting RxUpgrade in batch mode it can happen that RxUpgrade becomes unresponsive just after starting. In that case RxUpgrade needs to be restarted again.
3. When upgrading the receiver over an Ethernet connection, no other client should be connected to the receiver. Otherwise, there is a risk that the upgrade procedure is not successful.
4. When using the -c command line option to specify a connection file, please specify a connection file name without path. The connection file is then looked up in the ".septentrio" folder in the users home folder.

RxDownload v21.0.0

RxDownload is an application which is designed to download and post-process the internal log files from multiple receivers.

RxDownload differences to previous versions

RxDownload differences introduced in RxTools v21.0.0

No differences

RxDownload differences introduced in RxTools v20.0.0

No differences

RxDownload differences introduced in RxTools v19.0.1

No differences

RxDownload differences introduced in RxTools v19.0.0

New features in RxDownload:

1. The connection dialog has been improved. For existing connection items, information is shown about the receiver that is related to the item. Items also reflect whether the receiver (or file) is still available or not. (The polling of receivers can be disabled in the preferences.) It is now also possible to connect using the same TCP/IP connection in multiple instances of RxControl (or RxDownload/RxLogger) at the same time.

Issues resolved in RxDownload:

1. When using RxDownload to download files from a receiver that has logging enabled to multiple sessions (only supported by certain receivers), a bug has been fixed that caused only new files from one session to be downloaded, while the other sessions were skipped.

RxDownload known issues and limitations

1. When downloading large files, the CPU on the receiver can go up to 100%. This can cause data gaps in the receiver's logged data.
2. In specific configurations, such as on Linux with a serial to Ethernet converter, it may take a long time to detect which serial ports are available. When launching the application or when opening a new connection, this may cause the application to temporarily stop responding for some time (up to tens of seconds).

RxPlanner v21.0.0

RxPlanner is an intuitive stand-alone Satellite Mission planning software tool offering the determination of the visibility of GPS, GLONASS, GALILEO and Geostationary satellites in function of time and location, and of the resulting dilution of precision. The tool gives an estimate of the potential quality of a GNSS solution, and provides suggestions on appropriate times for surveying.

RxPlanner differences to previous versions

RxPlanner differences introduced in RxTools v21.0.0

No differences

RxPlanner differences introduced in RxTools v20.0.0

No differences

RxPlanner differences introduced in RxTools v19.0.1

No differences

RxPlanner differences introduced in RxTools v19.0.0

No differences

RxPlanner known issues and limitations

1. In certain situations, RxPlanner may attempt to download from the Celestrak website a YUMA or SEM almanac that has not yet been made available.
2. The 'Update Almanacs' button may become disabled (greyed out). Temporarily selecting another method for any constellation or toggling the 'Use same method for all constellations' checkbox, enables the button again.
3. On certain Linux distributions, RxPlanner may fail to download almanac files from the Septentrio website. For this download SSL is used. Unfortunately new Linux distributions are shipped with a new OpenSSL library that is not backwards compatible with the one used to compile RxTools. If you experience this problem, please install the OpenSSL compatibility libraries (e.g. on Fedora this is the package compat-openssl10).

RxAssistant v21.0.0

RxAssistant is an application offering simple configuration of a receiver for common tasks and/or connectivity to other GPS applications (GIS, Surveying, etc). It among others provides basic status monitoring, Ntrip as well as the configuration of NMEA output.

RxAssistant differences to previous versions

RxAssistant differences introduced in RxTools v21.0.0

No differences

RxAssistant differences introduced in RxTools v20.0.0

No differences

RxAssistant differences introduced in RxTools v19.0.1

No differences

RxAssistant differences introduced in RxTools v19.0.0

No differences

RxAssistant known issues and limitations

1. When RxAssistant is quit, or when the connection to the receiver is closed, the various settings, in particular the NMEA settings, persist. It is advised to keep RxAssistant running always when the receiver is used.
2. If the receiver does not have a valid position (and no fixed position is configured), establising an Ntrip connection may fail if the stream requires your position. In this scenario however, a meaningless error message "Connection congested" will be shown in the Ntrip tab.

RxLauncher v21.0.0

RxLauncher is a small launcher application that allows the user to start any application in the RxTools suite in an easy way.

RxLauncher differences to previous versions

RxLauncher differences introduced in RxTools v21.0.0

No differences

RxLauncher differences introduced in RxTools v20.0.0

No differences

RxLauncher differences introduced in RxTools v19.0.1

No differences

RxLauncher differences introduced in RxTools v19.0.0

No differences

APS3G Tools v21.0.0

Graphical tool to facilitate the configuration of a receiver from the Altus APS3G product line.

APS3G Tools differences to previous versions

APS3G Tools differences introduced in RxTools v21.0.0

No differences

APS3G Tools differences introduced in RxTools v20.0.0

No differences

APS3G Tools differences introduced in RxTools v19.0.1

No differences

APS3G Tools differences introduced in RxTools v19.0.0

No differences

SBF Tools

sbf2asc v3.1.4

Converter of SBF data to ASCII format. The source code of this application is available as sub-component of the RxTools Installer as an example of how to decode SBF.

sbf2asc differences to previous versions

sbf2asc differences introduced in RxTools v21.0.0

No differences

sbf2asc differences introduced in RxTools v20.0.0

No differences

sbf2asc differences introduced in RxTools v19.0.1

No differences

sbf2asc differences introduced in RxTools v19.0.0

No differences

sbf2cmd v2.3.32

Converter of SBF data to Commands. The tool allows users to visualize the different settings of a receiver over time. The commands are shown in an ASCII file created from the tool.

For full output the tool also uses the MIB file of the receiver used while the SBF data file was recorded.

sbf2cmd differences to previous versions

sbf2cmd differences introduced in RxTools v21.0.0

No differences

sbf2cmd differences introduced in RxTools v20.0.0

No differences

sbf2cmd differences introduced in RxTools v19.0.1

No differences

sbf2cmd differences introduced in RxTools v19.0.0

No differences

sbf2gpx v3.0.36

Converter of SBF data to GPX format. The GPX format is a common standard for GPS receivers used for storing position information in an XML-like file. This format can be loaded into Google Earth or can be converted using GPS Visualizer (www.gpsvisualizer.com).

sbf2gpx differences to previous versions

sbf2gpx differences introduced in RxTools v21.0.0

No differences

sbf2gpx differences introduced in RxTools v20.0.0

No differences

sbf2gpx differences introduced in RxTools v19.0.1

No differences

sbf2gpx differences introduced in RxTools v19.0.0

No differences

sbf2gpx known issues and limitations

1. Conversion to GPX assumes the SBF file contains positions in WGS84. If the SBF file contains positions in another datum, the GPX file will show position errors introduced by the datum difference.

sbf2kml v2.8.5

Converter of SBF data to KML format. The KML format is the common standard used by Google Earth. This format can be directly loaded into Google Earth. KML allows for several visualization features based on coloring and 3D objects shown directly in Google Earth.

sbf2kml differences to previous versions

sbf2kml differences introduced in RxTools v21.0.0

No differences

sbf2kml differences introduced in RxTools v20.0.0

No differences

sbf2kml differences introduced in RxTools v19.0.1

No differences

sbf2kml differences introduced in RxTools v19.0.0

No differences

sbf2kml known issues and limitations

1. If a file does not contain tracking data at the beginning (e.g. no tracking SV's even if channel status is output) then the Survey track functionality of KML will not work properly.
2. Conversion to KML assumes the SBF file contains positions in WGS84. If the SBF file contains positions in another datum, the KML file will show position errors introduced by the datum difference.

sbf2rin v13.8.0

Converter of SBF data to RINEX format. RINEX is the Receiver INdependent EXchange format. A set of standard definition and formats for ASCII data files to promote the free exchange of GNSS data and facilitate the use of data from any GNSS receiver with any software package. The tool allows for converting from SBF files into RINEX 2.1 and 3.0 formats.

sbf2rin differences to previous versions

sbf2rin differences introduced in RxTools v21.0.0

No differences

sbf2rin differences introduced in RxTools v20.0.0

Issues resolved in sbf2rin:

1. sbf2rin has a new option "-U" to discard any satellite duplication in observation epochs. With this option, a given satellite is guaranteed to only appear once per epoch in RINEX, even if tracked on multiple channels in the receiver.

sbf2rin differences introduced in RxTools v19.0.1

No differences

sbf2rin differences introduced in RxTools v19.0.0

New features in sbf2rin:

1. The RINEX file version is now 3.04 instead of 3.03.

sbfblocks v1.7.3

This tool allows users to visualize which blocks are present in an SBF file. The output is put into an ASCII output file and it will show the statistics of how many blocks of each type exist. The tool also allows detecting CRC errors in the file as well as detecting the type of DiffCorr messages stored in the present DiffCorr blocks.

sbfblocks differences to previous versions

sbfblocks differences introduced in RxTools v21.0.0

No differences

sbfblocks differences introduced in RxTools v20.0.0

No differences

sbfblocks differences introduced in RxTools v19.0.1

No differences

sbfblocks differences introduced in RxTools v19.0.0

Issues resolved in sbfblocks:

1. When using the timeline option (-t) of sbfblocks, the character for QZSS Navigation Page Messages is now "J" (before it was "Q").

sbf2ismr v7.7.0

Converter of SBF data to ISMR (Ionospheric Scintillation Monitor Receiver) format.

sbf2ismr differences to previous versions

sbf2ismr differences introduced in RxTools v21.0.0

No differences

sbf2ismr differences introduced in RxTools v20.0.0

Issues resolved in sbf2ismr:

1. sbf2ismr can now also generate ionosphere indices for the BeiDou B2a and Galileo E6 and E5AltBOC signals.

sbf2ismr differences introduced in RxTools v19.0.1

No differences

sbf2ismr differences introduced in RxTools v19.0.0

No differences

posconv v1.0.30

This tool allows for converting positions into the following different coordinate formats used in GNSS receivers: Geodetic Coordinates in (Degrees), Geodetic Coordinates in (Radians) and Cartesian Coordinates.

posconv differences to previous versions

posconv differences introduced in RxTools v21.0.0

No differences

posconv differences introduced in RxTools v20.0.0

No differences

posconv differences introduced in RxTools v19.0.1

No differences

posconv differences introduced in RxTools v19.0.0

No differences

timeconv v1.5.22

This tool allows for converting time into the following different time formats used in GNSS receivers: GNSS Date/Time, UTC Date/Time, GNSS seconds, TOW/WN.

timeconv differences to previous versions

timeconv differences introduced in RxTools v21.0.0

No differences

timeconv differences introduced in RxTools v20.0.0

No differences

timeconv differences introduced in RxTools v19.0.1

No differences

timeconv differences introduced in RxTools v19.0.0

No differences

sbf2cggtts v1.4.0

The sbf2cggtts tool is a utility to convert an SBF file into a CGGTTS version 2E file.

sbf2cggtts differences to previous versions

sbf2cggtts differences introduced in RxTools v21.0.0

Issues resolved in sbf2cggtts:

1. CGGTTS: the CGGTTS files now have 5 whitespaces instead of 3 in the first header line after the 'CGGTTS' tag.

sbf2cggtts differences introduced in RxTools v20.0.0

Issues resolved in sbf2cggtts:

1. In CGGTTS files, the different INT DLY values are now separated by a comma, instead of only white spaces.

sbf2cggtts differences introduced in RxTools v19.0.1

No differences

sbf2cggtts differences introduced in RxTools v19.0.0

No differences

sbf2sbf v1.2.3

Converter of SBF data to the same SBF format. The idea of this tool is to allow users to manipulate SBF files with different functionalities such as cutting the file, removing specific blocks from a file, merging different SBF files into one, etc.

sbf2sbf differences to previous versions

sbf2sbf differences introduced in RxTools v21.0.0

No differences

sbf2sbf differences introduced in RxTools v20.0.0

New features in sbf2sbf:

1. The sbf2sbf conversion tool has been added to RxTools. The sbf2sbf executable is available in the installation directory.

bin2asc v1.6.4

The bin2asc tool converts SBF data to ASCII files. Each message is represented as a line of delimiter-separated line of human-readable field values. This tool replaces the sbf2stf tool since it supports much more blocks and conversion features.

bin2asc differences to previous versions

bin2asc differences introduced in RxTools v21.0.0

No differences

bin2asc differences introduced in RxTools v20.0.0

No differences

bin2asc differences introduced in RxTools v19.0.1

No differences

bin2asc differences introduced in RxTools v19.0.0

No differences

bin2asc known issues and limitations

1. When extracting generic measurements (using –extractGenMeas), the last measurements epoch could be dropped from the output file. If this is the case, output of this last measurement epoch can be ensured by including the EndOfMeas SBF block in the log file.
2. The bin2asc tool may still change in the future with respect to its interface and output format. The message names to be used for message selection may change. The fields, their order, and the way they are formatted may change.
3. The default number of digits used for the representation of certain fields in bin2asc or the message inspector may be insufficient. When more precision is needed, bin2asc allows to specify the required precision.

Receiver Communication SDK for C++/Qt v21.0.0

The Septentrio Receiver Communication SDK for C++/Qt provides a cross-platform software development kit for interacting with Septentrio GNSS receivers. It facilitates building third-party applications by offering components to set up a connection to a receiver, and to communicate with it. The SDK is written in C++ and Qt 4.x.

Receiver Communication SDK for C++/Qt differences to previous versions

Receiver Communication SDK for C++/Qt differences introduced in RxTools v21.0.0

No differences

Receiver Communication SDK for C++/Qt differences introduced in RxTools v20.0.0

No differences

Receiver Communication SDK for C++/Qt differences introduced in RxTools v19.0.1

No differences

Receiver Communication SDK for C++/Qt differences introduced in RxTools v19.0.0

No differences

USB Driver v3.0.2

The USB Windows drivers for Septentrio receivers consisting of the Thesycon CDC/ACM Driver (provides serial port link via USB) and the RNDIS Driver (provides a virtual Ethernet link via USB).

USB Driver differences to previous versions

USB Driver differences introduced in RxTools v21.0.0

No differences

USB Driver differences introduced in RxTools v20.0.0

No differences

USB Driver differences introduced in RxTools v19.0.1

No differences

USB Driver differences introduced in RxTools v19.0.0

No differences

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